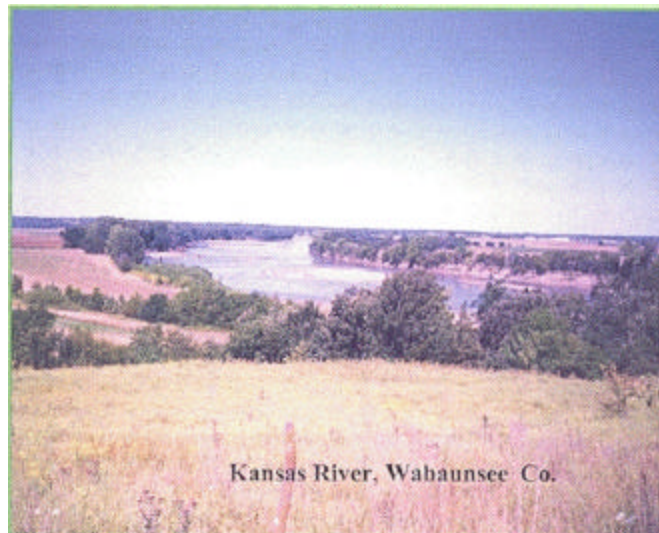


2001-2002

# **KANSAS'S NONPOINT SOURCE POLLUTION PROGRAM ANNUAL REPORT**



**Kansas Department of Health &  
Environment**



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## 2002 Annual 319 Report Purpose


Information contained in this report has been compiled to meet the requirements of Subsection 319(h)(11) of the Clean Water Act, which requires each state to report to the Administrator on an annual basis concerning:

- (1) *A brief summary of progress in meeting approved milestones and the near and long-term objectives identified in the State nonpoint source management program.*
- (2) *A report on projects or programs related to milestones from the current year activities for the approved State program.*
- (3) *A discussion of the extent to which Federal agencies, lands, and activities within the State are supporting the State in meeting approved milestones.*
- (4) *To the extent information is available, a discussion of reductions achieved in nonpoint source loadings and improvements in water quality resulting from activities of nonpoint source programs.*
- (5) *Where information is not available surrogate measures of progress in reducing nonpoint source pollution should be used and progress should be indicated in terms the type and numbers of sources achieving abatement of discharges or the type and numbers of potential sources implementing control measures or other indicators should be reported in terms of the degree or percentage of completion of the project.*

The objective of this report is to provide an accurate and complete description of the activities of government, the private sector, and individuals within the state of Kansas to control nonpoint source pollution. The information contained in this report has been completed from numerous sources, and is thought to be the most reliable available.

This report has been organized in accordance with the EPA's *State Guidance for Section 319 Annual Reports – Fiscal Year 1989*, and is intended to satisfy the reporting requirements of Section 319 of the Clean Water Act.





# Chapter 1

## Program Overview



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# Kansas Watershed Management Program Overview

## General Information

### Watershed Management Section Purpose

The Watershed Management Section implements Section 319 of the Clean Water Act, coordinating programs designed to eliminate or minimize pollution that does not come from the end of a pipe. The section develops and reviews strategies, management plans, local environmental protection plans, and county environmental codes intended to control nonpoint source pollution.

### I. Mission and Goals of Kansas's NPS Program:

The nonpoint source pollution control goals of Kansas are to have Kansas water resources free of pollution caused by nonpoint sources. Given the current resource of funding, time and number of people in Kansas with the knowledge and skills to identify, and address water quality problems caused by nonpoint sources, this goal is anticipated to be achieved by 2060.

#### Short Term Goals

##### Pollutant Specific Implementation Strategies

Strategy	Strategy Adopted	Funding Secured	Project Team Established	Implementation Time Frame
Fecal Coliform Bacteria	7/1/2002	7/1/2000	5/1/2002	8/1/2000-12/2006 For 10 highest priority UWA Watersheds
Atrazine	8/1/2002	7/1/2001	7/1/2002	8/1/2001-12/2006
Total Suspended Solids	12/1/2002	7/1/2003	10/1/2002	8/1/2001-12/2006
Phosphorus	12/1/2002	7/1/2003	10/1/2002	8/1/2001-12/2006
Nitrate	12/1/2002	7/1/2003	10/1/2002	8/1/2001-12/2006

Complete by:

TMDL Development	Development of 1404 TMDLs are completed for 12 river basins	2003
WRAPS	Watershed Restoration and Protection Strategies will be complete for 90 Huc 8 watersheds.	2006

## Short Term Goals

### Program Administrative Goals

**Complete by:**

Management Advisory Committee	Maintain an effective Nonpoint Source Advisory Committee to provide advice on NPS program direction, project selection and program effectiveness.	Continuous
Increase Capacity to Achieve Nonpoint Source Goals	Graduate at least 100 students from the Kansas Environmental Leadership Program (KELP).	12/2004
Pledges to Protect Water Quality	Obtain 5000 signatures of the Clean Water Pledge to increase awareness.	1/2005
Celebrate Water Quality	Have a water quality celebration in each of Kansas' 105 counties, recognize individuals practicing water quality protection excellence.	12/2003*
Institute a Revolving Loan Fund for Nonpoint Sources	The January 19, 2000 offering of <i>Kansas Water Pollution Control Revolving Fund Revenue Bonds</i> identified an <b><i>Environmental Initiatives Fund</i></b> . This fund will serve as the source of funds for nonpoint source pollution control loans.	12/2003*
Source Water Assessment	Integrate the expectations of the Kansas nonpoint source assessment with the Source Water Assessment Program required under the Safe Drinking Water Act.	6/1/2003
Review & Update Management Plan	Perform a comprehensive review of implementation progress. Determine if the rate of progress is such that plan goals will be achieved. Revise the implementation strategy as necessary.	9/30/2006
Water Quality Performance Watersheds	Select 12 to 20 HUC 8 Watersheds to be used to measure improvements in water quality.	7/1/2004*

**\*Revised Management Plan dates**




## Staff Information:

In June 2002, the Watershed Management Section consisted of 8 full-time individuals and 2 part-time interns. Currently, there are 7 full-time employees dedicated to protecting and improving water quality within the state of Kansas. The credentials of this qualified staff includes: 1 Legal Secretary Certificate, 5 Bachelors degrees, and 3 Masters degrees.

The Watershed Management Section staff consists of:

Don Snethen.....	Section Chief
Robert Beilfuss.....	Environmental Scientist
Rick Davis.....	Environmental Scientist
Lisa Duncan.....	Administrative Assistant
Robert Hossfeld.....	Public Service Administrator
Scott Satterthwaite.....	Pollution Control Specialist
Wynona Williams.....	Senior Administrative Assistant
Jaime Ziesenis.....	Environmental Scientist



# Chapter 2

## Executive Summary



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## Executive Summary:

Short Term Goals & Milestones		
Pollutant Specific Implementation Strategies		
Strategy	Progress	Complete By Date
<b>Fecal Coliform Bacteria</b>	<p> <b>Goal:</b> Adopt FCB strategy  <b>Goal:</b> Secure funding for the FCB strategy  <b>Goal:</b> Establish a Project Team  <b>Goal:</b> Implement FCB strategy for 10 highest priority UWA Watersheds </p> <p style="text-align: right;">* revised schedule</p> <p> <b>Status:</b> To date an informal strategy based on the project-  <b><i>Abatement of Fecal Coliform Bacteria</i></b> sponsored by Kansas State University and others is the principal response to this issue. A formal review of progress will be completed by December 31, 2003. A revised strategy will be issued by April 1, 2007. In addition, work has been initiated by the Bureau of Water via the tri-annual water quality standards review to consider e-coli as the water quality criteria. </p>	<p>7/1/2002*</p> <p>7/1/2000</p> <p>5/1/2002*</p> <p>8/1/2000-12/2006</p>
<b>Team Leader: Don Snethen</b>	<p> <b>Team Members:</b> Kansas State University - KCARE, Bill Hargrove &amp; Cooperative Extension Service; Daryl Bucholz; State Conservation Commission, Don Jones, Scott Carlson; Kansas Department of Agriculture, Dale Lambley; Natural Resources Conservation Service, Lyle Frees; Kansas Water Office, Margaret Fast, Hank Ernst; Kansas Livestock Association, Kansas Farm Bureau, Kansas Pork Council, Kansas Rural Center; Local Environmental Protection Programs &amp; Health Departments; County Conservation Districts, KDHE - Bureau of Water - Watershed Management Section, Watershed Planning Section - TMDL program, Tom Stiles; and District Offices </p>	

For more information see the project status report - *Abatement of Fecal Coliform Bacteria* for current project status and a list of watershed specialists appointed to the project.

Strategy	Progress	Complete By Date
<b>Atrazine</b>	<p><b>Goal:</b> Adopt Atrazine Strategy</p> <p><b>Goal:</b> Secure funding for the Atrazine strategy</p> <p><b>Goal:</b> Establish a Project Team</p> <p><b>Goal:</b> Implement Atrazine strategy for 10 highest priority UWA Watersheds</p> <p style="text-align: right;"><b>* revised schedule</b></p> <p><b>Status:</b> Strategy is not fully organized at this time. Several projects completed or projects currently in progress provide direction for current activities. The leaders of these projects will be invited to attend a strategic planning forum to assist in formulating the final strategy.</p>	<p>8/1/2002*</p> <p>7/1/2001</p> <p>7/1/2002*</p> <p>8/1/2001-12/2006</p>
<b>Team Leader: Don Snethen</b>	<p><b>Team Members:</b> Kansas State University, Dan Devlin &amp; Phil Barns; Kansas Department of Agriculture, Dale Lambley; KDHE - Bureau of Water - Watershed Planning Section - TMDL program, Tom Stiles.</p>	

Several current projects (see project status report section for additional information) provide current direction and basis for the revised strategy:

- T    Expansion of Certified Crop Advisor Program in Kansas*
- T    To date work performed under the project Reducing Atrazine Runoff (Blue & Delaware) sponsored by K-State Research & Extension is the guiding strategy. This project has been completed. A formal review is scheduled to be completed by December 31, 2003 and a revised and updated strategy will be issued by April 1, 2004.*
- T    Water Quality Profit Optimization*
- T    Environmental and Economic Analysis of Switchgrass Production for Water Quality Improvement*

Strategy	Progress	Complete By Date
<b>Total Suspended Solids</b>	<p><b>Goal:</b> Adopt Total Suspended Solids (TSS) Strategy</p> <p><b>Goal:</b> Secure funding for the TSS strategy</p> <p><b>Goal:</b> Establish a Project Team</p> <p><b>Goal:</b> Implement TSS strategy for 10 highest priority UWA Watersheds</p> <p style="text-align: right;"><b>* revised schedule</b></p> <p><b>Status:</b> Strategy is not fully organized at this time. Several projects completed or projects currently in progress provide direction for current activities. The leaders of these projects will be invited to attend a strategic planning forum to assist in formulating the final strategy.</p>	<p>12/1/2003*</p> <p>7/1/2004*</p> <p>7/1/2003*</p> <p>8/1/2001-12/2006</p>
<b>Team Leader: Don Snethen</b>	Team Members: Dan Devlin - KSU, Don Jones - SCC, Tom Stiles - BOW.	

\*revised dates

Current projects which provide some direction in addressing the Total Suspended Solids issue and formulating the implementation strategies are:

- T     *Expansion of Certified Crop Advisory Program in Kansas*
- T     *Water Quality Profit Optimization*
- T     *Suburban Site Planning for Quality Stormwater Management*
- T     *Clinton Lake Watershed Modeling Assessment*
- T     *Environmental and Economic Analysis of Switchgrass Production for Water Quality Improvement*
- T     *Kanopolis Watershed Assessment*

Strategy	Progress	Complete By Date
<b>Phosphorus</b>	<p><b>Goal:</b> Adopt Phosphorus Strategy</p> <p><b>Goal:</b> Secure funding for the Phosphorus strategy</p> <p><b>Goal:</b> Establish a Project Team</p> <p><b>Goal:</b> Implement Phosphorus strategy for 10 highest priority UWA Watersheds</p> <p style="text-align: right;">* <b>revised schedule</b></p> <p><b>Status:</b> Achievement of this goal has been delayed by changes in EPA direction concerning nutrient criteria for state water quality standards. Several projects, completed or currently in progress provide direction for current activities. The leaders of these projects will be invited to attend a strategic planning forum to assist in formulating the final strategy.</p>	<p>12/1/2002*</p> <p>7/1/2003*</p> <p>10/1/2002*</p> <p>8/1/2001-12/2006</p>
<b>Team Leader: Don Snethen</b>	Team Members: KDHE Bureau of Water - Mike Tate, Tom Stiles, others to be named.	

Current projects which provide some direction in addressing this issue and formulating the implementation strategy are:

- T     *Expansion of Certified Crop Advisory Program in Kansas*
- T     *Water Quality Profit Optimization*
- T     *Suburban Site Planning for Quality Stormwater Management*
- T     *Clinton Lake Watershed Modeling Assessment*
- T     *Environmental and Economic Analysis of Switchgrass Production for Water Quality Improvement*
- T     *Kanopolis Watershed Assessment*

Strategy	Progress	Complete By Date
Nitrate	<p><b>Goal:</b> Adopt Nitrate Strategy</p> <p><b>Goal:</b> Secure funding for the Nitrate strategy</p> <p><b>Goal:</b> Establish a Project Team</p> <p><b>Goal:</b> Implement Nitrate strategy for 10 highest priority UWA Watersheds</p> <p><b>Status:</b> Achievement of this goal has been delayed by changes in EPA direction concerning nutrient criteria for state water quality standards. Several projects, completed or currently in progress provide direction for current activities. The leaders of these projects will be invited to attend a strategic planning forum to assist in formulating the final strategy.</p>	<p>12/1/2002*</p> <p>7/1/2003</p> <p>10/1/2002</p> <p>8/1/2001-12/2006</p>
<b>Team Leader:</b> <b>Don Snethen</b>	Team Members: KDHE Bureau of Water - Mike Tate, Tom Stiles, others to be named.	

Current projects which provide some direction in addressing this issue and formulating the implementation strategy are:

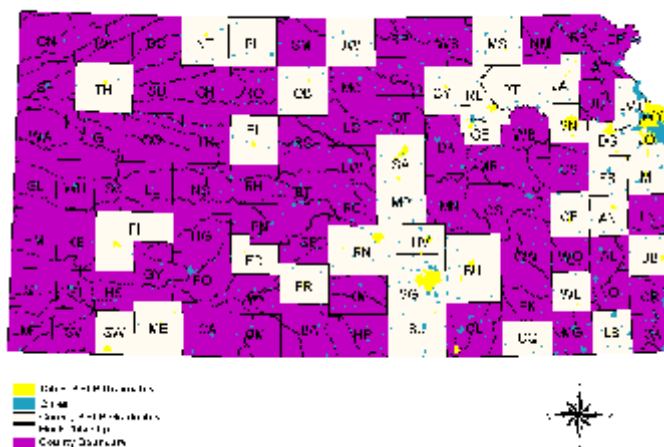
- T     *Expansion of Certified Crop Advisory Program in Kansas*
- T     *Water Quality Profit Optimization*
- T     *Clinton Lake Watershed Modeling Assessment*
- T     *Environmental and Economic Analysis of Switchgrass Production for Water Quality Improvement*
- T     *Kanopolis Watershed Assessment*
- T     *Variable Nitrogen management for Improving Groundwater Quality*
- T     *Sand Springs Aquifer - NPS Pollution Control*

Activity	Progress	Complete By Date
<b>Increase Capacity to Achieve Nonpoint Source Goals</b>	<p><b>Goal:</b> Graduate at least 100 students from the Kansas Environmental Leadership Program (KELP).</p> <p><b>Status:</b> As of June 2002, the KELP program has graduated 90 individuals from all over the state. The KELP program has been successfully implemented. A pilot class to evaluate the concept and program has been completed and additional classes have been recruited.</p>	12/2004
<b>Team Leader: Don Snethen</b>	Team Members: Kansas State University, Morgan Powell, Judy Willingham, John Leatherman, Bill Hargrove, Daryl Bucholz, Dan Kahl; KDHE, Don Snethen	

### KELP Graduates

Robert Beilfuss	Ronald Appletoft	Scott Satterthwaite	Charlene Weiss
Diane Coe	Jessic Baetz	Jeff Sibley	Shari Wilson
Tawnya Ernst	Daniel Baffa	Debra Smith	Derek Zongker
Vernis Flottman	Wayne Bossert	Donn Teske	Joyce Wolf
Lisa French	Ronald Brown	Roger Boyd	Paula Ford
Stan Freyenberger	Mike Christian	Jamison Bear	Doug Musci
Kate Grover	David Criswell	Carl Holmes	Carl Nuzman
Irene Hart	Barbara Dallemand	Carolyn McGinn	Scott Paszkiewicz
Bill Langley	Dirk Durant	Don Snethen	Karen Purvis
Barbara Lilyhorn	Arthur Fink	Mary Fund	Christina Schmalzried
Millie Mangerich	Robert Frisbie	Tom Bach	Paula Selby
Brian Meier	Ron Graber	Laura McClure	Vaughn Weaver
Kristen Mitchell	Mark Goldsberry	Hank Ernst	Bradley Goering
Paul Montoia	John Gough	Chris Mammoliti	Tim Wagner
Robert Schwartz	Carly Adams	Kurt Bookout	Thomas Morey
Thomas Sloan	Sandra Koontz	Ron Betzen	Leslie Olsen
Shari Stamer	Milton Krainbill	Darrel Gale	John Bristor
Robert Broweleit	Mark Eisenbarth	Susan Erlenwein	Eowyn Floyd
Pat Flynn	Allan Grilliot	Eileen Hack	John Head
Mary Howell	Paul Ingle	Tom Meek	Jim Michael
Arnold Ross	Daniel Smading	Glen Wiltse	Eugene Young
Jaime Ziesenis	Ronald Osterbuhr	Carl Rogers	Kevin Dobbbs
Tom Wilson			Herschel George

### Locations of KELP Graduates



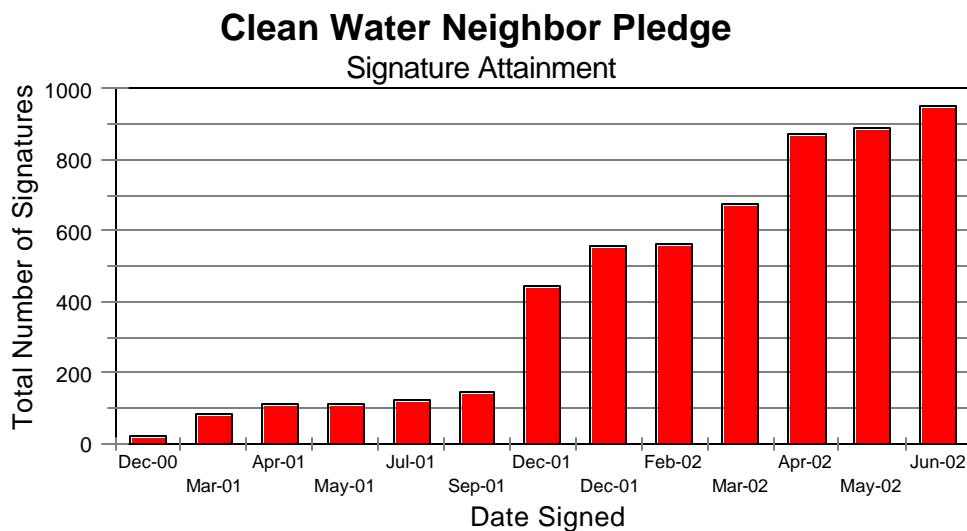
## Short Term Goals

### Program Administrative Goals

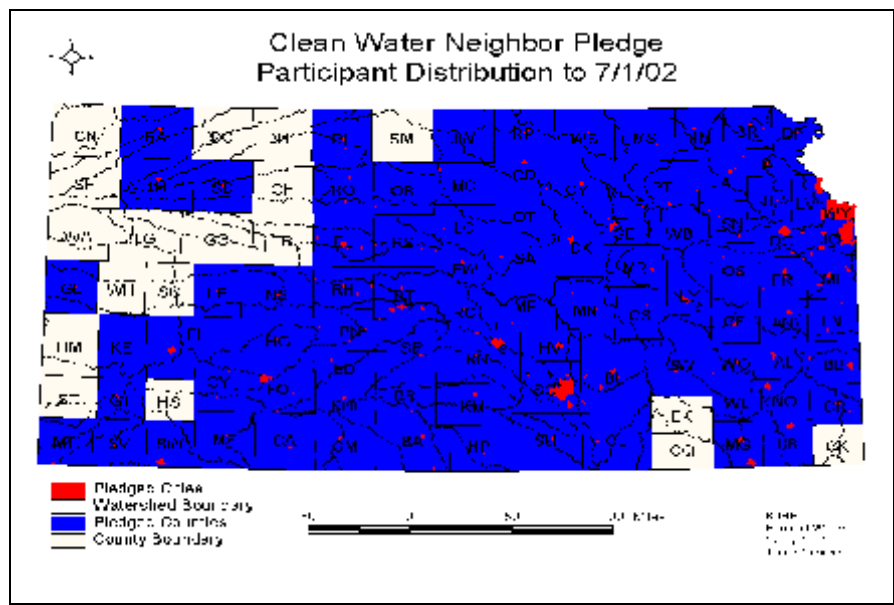
Complete by:

<b>Pledges to Protect Water Quality</b>	<b>Obtain 5000 signatures of the Clean Water Pledge to increase awareness.</b>	<b>1/2005</b>
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Below is a chart showing the total number of signatures obtained for the Clean Water Neighbor Pledge from December of 2000 to June 2002. By June 2002, the Watershed Management Section had obtained 888 adult signatures of the CWN pledge.



Below is a map of the Clean Water Neighbor participants distribution. These participants represent 87 different counties in Kansas (up from 36 counties last year).





Recognizing that clean water  
is essential to the health and welfare  
of plants, animals and people,

*Joe Cleanwater*

has hereby pledged to:

Be aware of activities which threaten the quality of Kansas' water resources.

Be aware of measures and practices which prevent the discharge of pollutants  
to Kansas' water resources.

Conduct my business and personal activities, to the extent that I am able,  
in a manner that will assure restoration and maintenance of clean water in Kansas.

Bureau of Water

Secretary  
Kansas Department of Health and Environment

Date



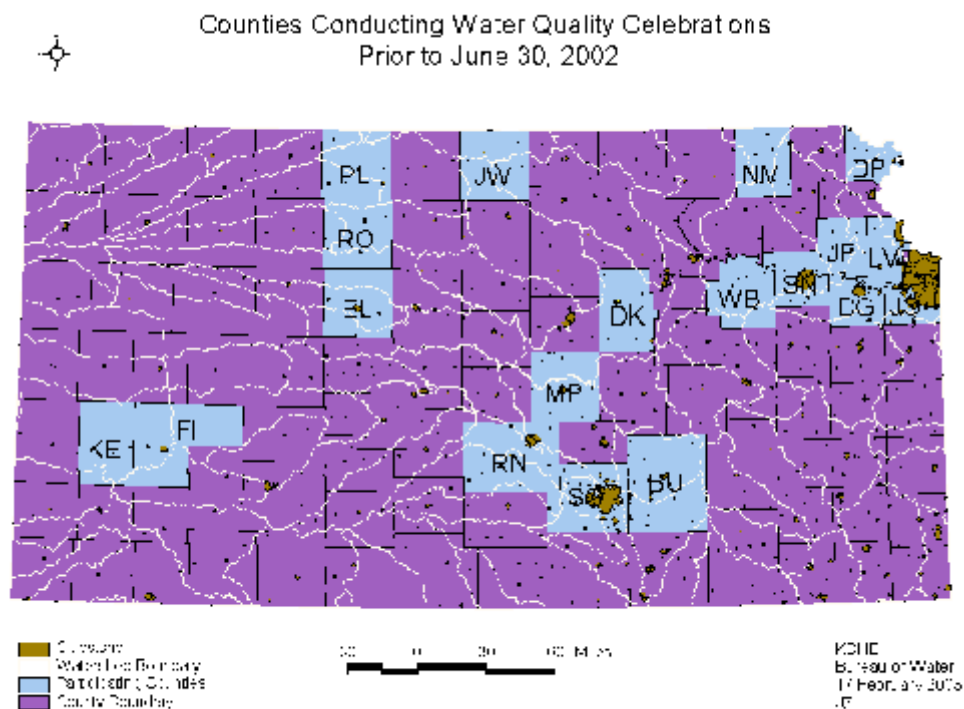
Be a clean water neighbor





Activity	Progress	Complete By Date
<b>Celebrate Water Quality</b>	<p><b>Goal:</b> Have a water quality celebration in each of Kansas' 105 counties, recognize individuals practicing water quality protection excellence.</p> <p>Status: In beginning stages</p>	12/2003

Currently, there are 16 counties participating in water quality celebrations. These water quality celebrations are intended to educate individuals in local communities on local and statewide water quality issues and concerns. The celebrations can range from elementary school education activities to public meetings or newspaper articles. Below is a map of counties that have conducted water quality celebrations prior to June 30, 2002.



Activity	Progress	Complete By Date
<b>Institute a Revolving Loan Fund for Nonpoint Sources</b>	<p><b>Goal:</b> The January 19, 2000 offering of <i>Kansas Water Pollution Control Revolving Fund Revenue Bonds</i> identified an <b><i>Environmental Initiatives Fund</i></b>. This fund will serve as the source of funds for nonpoint source pollution control loans.</p> <p><b>Status:</b> Behind Schedule</p>	<b>12/31/2003</b>
<b>Team Leader: Richard Basor</b>	Team Members: Don Snethen, Kansas State University, Kansas Bankers Association, Allen Featherstone	

KDHE has a cooperative project with the Department of Agricultural Economics at Kansas State University to work in conjunction with the Kansas Bankers Association to develop the necessary administrative rules and regulations and the agreements to be entered into by the participating banks. Draft documents have been prepared and reviewed and approved by the KDHE legal staff. No other progress has been made and the cooperator has not submitted further progress reports.

Activity	Progress	Complete By Date
<b>Source Water Assessment</b>	<p><b>Goal:</b> Complete Kansas Source Water Assessment.</p> <p><b>Status:</b> KDHE began implementing the Kansas SWAP plan in fall of 2001.</p>	6/2004
<b>Team Leader: Rob Beilfuss</b>	Team Members: Watershed Management Section, Kansas Rural Water Association, Local Environmental Protection Program, and Groundwater Management Districts.	

KDHE contracted with Burns & McDonnell in December, 2001 to help implement the Kansas Source Water Assessment Program. Initial implementation activities focused on the creation of an automated source water assessment tool (ASWAT) available on the internet. ASWAT was created in the Spring of 2002 to facilitate the exchange of source water assessment information between KDHE and public water supplies. Letters were sent out in July 2002 to all public water supplies soliciting voluntary participation in the SWAP program. In August 2002 ASWAT training workshops were held at various locations in Kansas to provide training. ASWAT became available on-line September 1, 2002 and is currently being used by public water supplies to complete their source water assessments.

Activity	Progress	Complete By Date
<b>Kansas Water Plan</b>	<p><b>Goal:</b> Achieve the Kansas Water Plan 2010 Objectives.</p> <ul style="list-style-type: none"> <li>U Reduce the average concentration of bacteria, biochemical oxygen demand, dissolved solids, metals, nutrients, pesticides and sediment that adversely affect the water quality of Kansas lakes and streams.</li> <li>U Reduce the average concentration of dissolved solids, metals, nitrates, pesticides and volatile organic chemicals that adversely affect the quality of Kansas groundwater.</li> <li>U Ensure that water quality conditions are maintained at a level equal to or better than year 2000 conditions.</li> </ul> <p><b>Status:</b> All water quality protection and restoration projects initiated by KDHE - Watershed Management Section that receive EPA Section 319 Grants or other funding are designed to support achievement of the Kansas Water Plan 2010 Objectives. Progress towards attainment of these goals are assessed through the Kansas water planning process. For nonpoint source pollution control projects initiated under KDHE provided funding statewide water quality conditions set out in Appendix B of the Kansas Nonpoint Source Management Plan 2002 Update serve as bench marks.</p>	2010
<b>Team Leader:</b> Kansas Water Office	Team Members: <b>Don Snethen</b> - KDHE	

Activity	Progress	Complete By Date
<b>Watershed Protection and Restoration Strategy</b>	<p><b>Goal:</b> Develop a WRAPS for each of Kansas' 90 Huc 8 Watersheds in the order of watershed restoration priority ranking as set by the KS Unified Watershed Assessment.</p> <p><b>Status:</b> To date the following Huc 8 Watersheds have either initiated, are in progress or have completed the WRAPS: 11030003, 11030004, 11030009, 11030008, 11030011, 10260006, 10270104, 10290101, 10290102, 11030017, and 11030018 totaling 11 Huc 8 Watersheds. Of these 11 participating watersheds, 5 out of the 11 are ranked in the top 20 watershed priority ranking according to the KS Unified Watershed Assessment.</p>	2010
<b>Team Leader: Don Snethen</b>	Team Members: Don Snethen, Scott Satterthwaite, Jaime Ziesenis, Robert Beilfuss, Kansas State University Research & Extension,	



# Chapter 3

## State NPS Issues

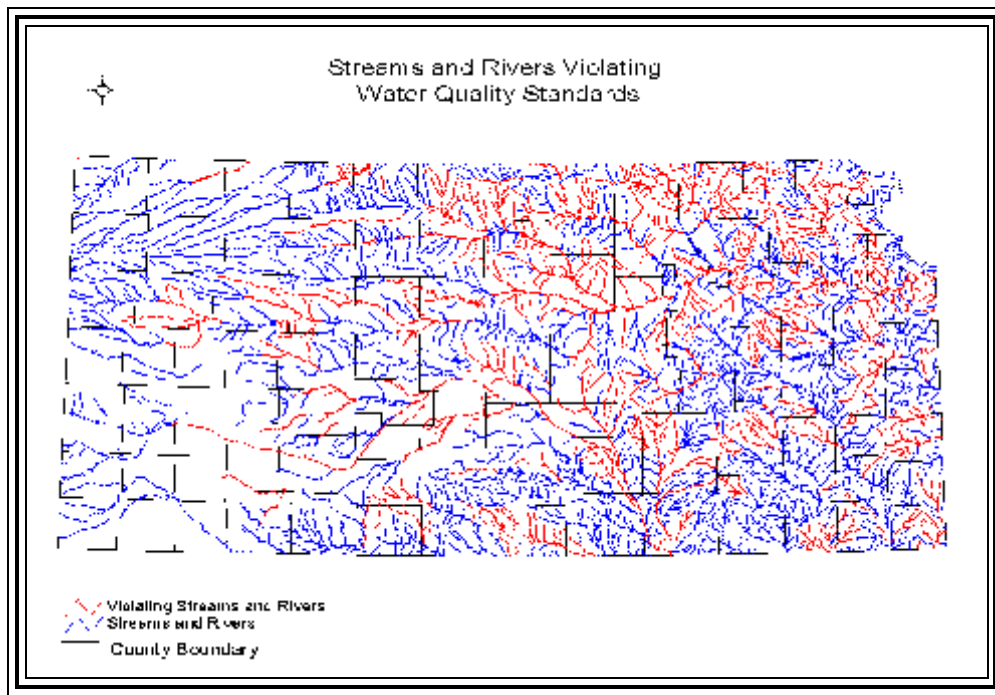


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## What are NPS pollution concerns in Kansas?

According to the Surface Water Register, there are approximately 977 streams, creeks, and rivers within the state of Kansas. Of these 977, approximately 407 water bodies are violating Kansas Water Quality Standards, or 40.3%. Figure 1 shows the location of the impaired rivers, streams, and creeks in red.

**Figure 1**



**Figure 2**

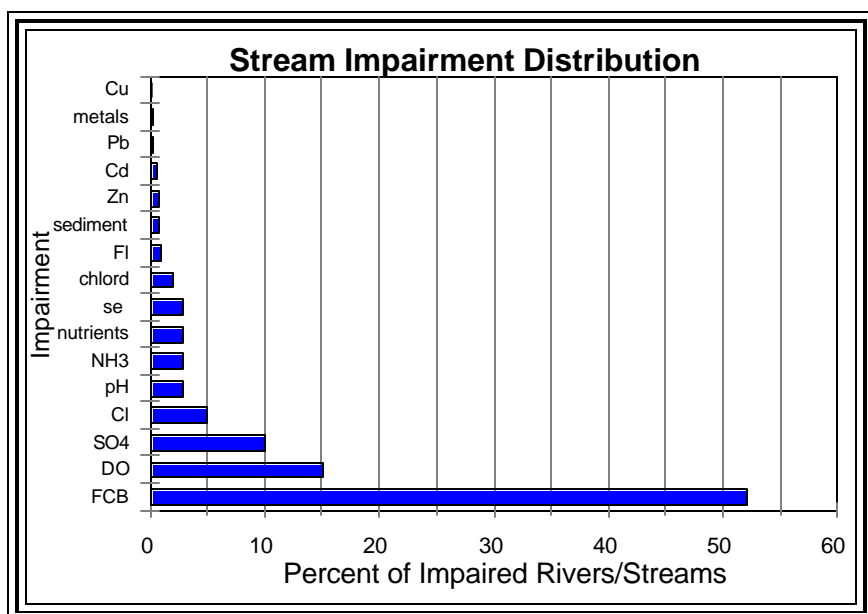
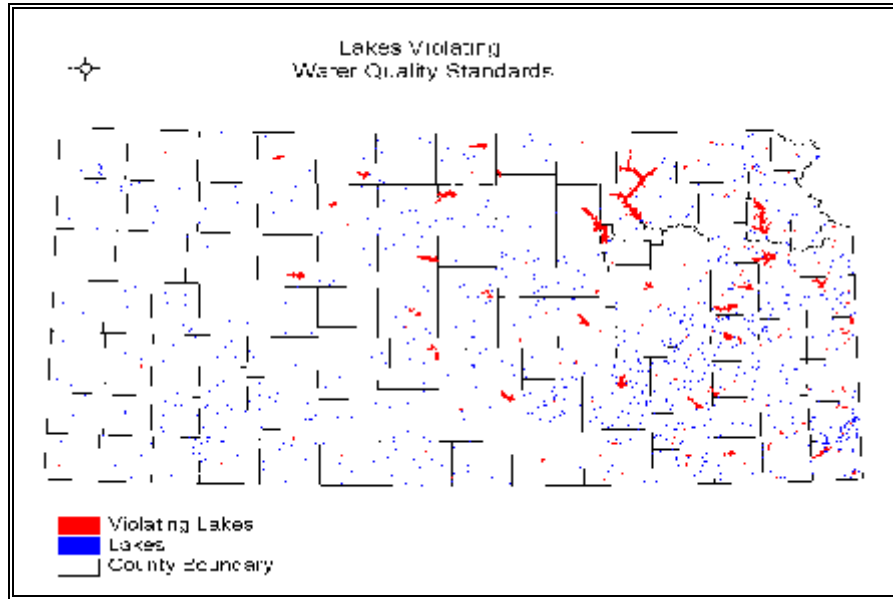


Figure 2 shows the impairment distribution for the above referenced stream miles that violate water quality standards.

Cu = Copper  
PB = Lead  
Cd = Cadmium  
FI = Flouride  
chlord = Chlordane  
NH3 = Ammonia  
Cl = Chloride  
SO4= Sulfate  
DO = Dissolved Oxygen  
FCB = Fecal Coliform

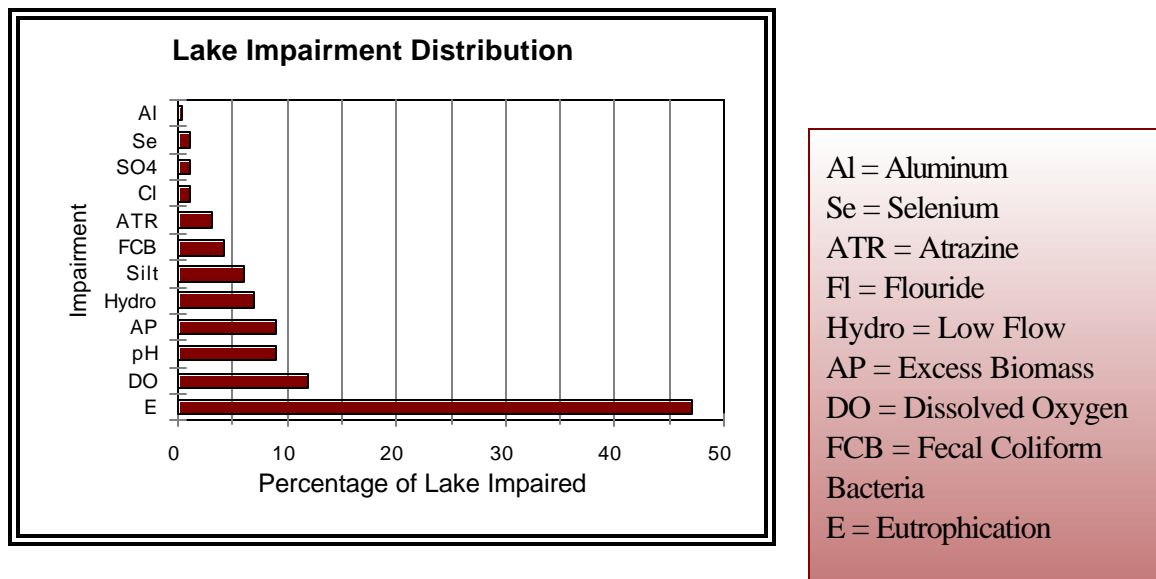
According to the Surface Water Register, there are approximately 289 lakes within the state. Approximately 126 lakes do not meet water quality standards, or 43.6%. Figure 3 below shows the location of lakes not meeting water quality standards.

**Figure 3**



**Figure 4**

Figure 4 shows the impairment distribution for lakes not meeting water quality standards.



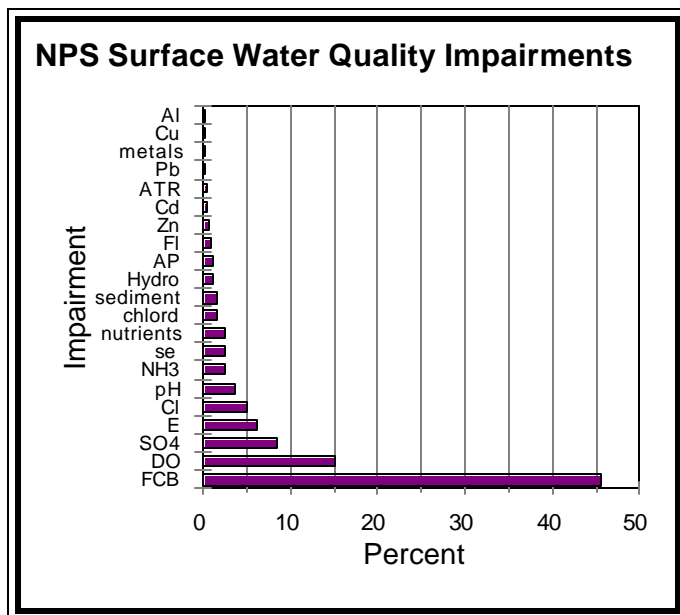
## Nonpoint Source Surface Water Quality Concerns

### The Top 5 Nonpoint Source Water Quality Impairments in Kansas:

1. **Fecal Coliform Bacteria** is a bacteria found in the digestive systems of warm blooded animals. The bacteria is present and transported in the fecal matter of warm blooded animals. In the environment, coliform bacteria is not believed to be a disease causing organism, but it is an indicator of potential disease producing organisms as well as the water's sanitary conditions. Potential sources of FCB include failing septic systems, wastewater treatment facilities, wildlife, pets, livestock facilities, and animal farms.
2. **Dissolved Oxygen** is the amount of oxygen available in the water column. Dissolved oxygen levels are a concern to aquatic biota when it reaches low levels. Low levels of dissolved oxygen typically coincide with an abundance of algae, which may be caused by excess nutrients within the watershed. Potential sources of excess nutrients include feedlots, wastewater treatment facilities, septic systems, wildlife, and grazing land.
3. **Sulfate** is a naturally occurring mineral in the underlying bedrock. Sulfate water quality concerns typically coincide with abandoned mine sites and low stream flow. As the soil and rock is disturbed during mining, sulfate minerals are exposed to oxidizing conditions in the presence of water and oxygen and form an acidic drainage potentially harmful to aquatic organisms. Low stream flow and evaporation associated with irrigation return flows can concentrate naturally occurring minerals such as sulfates.
4. **Eutrophication** is a natural process which creates conditions favorable for algae blooms and excess plant growth. This process is often accelerated by excess nutrient loading from the watershed.
5. **Chloride** is a naturally occurring compound. In high concentrations, chloride compounds can cause deterioration of domestic plumbing, water heaters, and municipal water works.

Figure 5 is based on all surface waters currently violating state water quality standards. Of the impaired surface waters within the state, 46% percent are impaired by **Fecal Coliform Bacteria**, 15% are impaired by low **Dissolved Oxygen** levels, 9% are impaired by **Sulfate**, 6% by **Eutrophication**, and 5% by high or low **Chloride** levels.

Figure 5



Al = Aluminum  
Cu = Copper  
Pb = Lead  
ATR = Atrazine  
Zn = Zinc  
Fl = Flouride  
AP = Excess biomass  
Hydro = Low flow  
Chlord = Chlordane  
Se = Selenium  
NH3 = Ammonia  
Cl = Chloride  
E = Eutrophication  
SO4 = Sulfate  
DO = Dissolved Oxygen



## **Watershed Management Section Purpose**


The Watershed Management Section, formerly known as the Nonpoint Source Section, implements Section 319 of the Clean Water Act, coordinating programs designed to eliminate or minimize pollution that does not come from the end of a pipe. The section develops and reviews strategies, management plans, local environmental protection plans, and county environmental codes intended to control nonpoint source pollution.

## **Program Goals**

### **Nonpoint Source Pollution Goals**

The Watershed Management Sections ultimate goal is to have Kansas water resources free of pollution caused by nonpoint sources. Given current resources of funding, time and number of people in Kansas with the knowledge and skills to identify and address water quality problems caused by nonpoint sources, KDHE anticipates this goal will be achieved by 2060.

Short term goals consist of developing and implementing pollutant specific management strategies. For Fecal Coliform Bacteria, a strategy was adopted in June of 2000. The implementation time frame for the ten highest priority watersheds is from August 1, 2000 to December 2006. For atrazine, total suspended solids, phosphorus and nitrates, a strategy has been adopted and the implementation time frame is from August 1, 2001 to December 2006.



# Chapter 4

## Collaborative Program Accomplishments



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## Collaborative Program Accomplishments

Program accomplishments reported in this chapter are a result of collaborative efforts between the Kansas Department of Health & Environment (KDHE) and the State Conservation Commission (SCC). These two cooperating agencies work together to best meet the needs of the state of Kansas.

The best management practice codes throughout this chapter were developed by the Natural Resource Conservation Service to define and describe the management practice. These codes were adopted by the KDHE and the SCC.

## Best Management Practices

### Site Restoration/Rehabilitation & Pollution Control/Prevention

#### **Stream/Shoreline Protection**

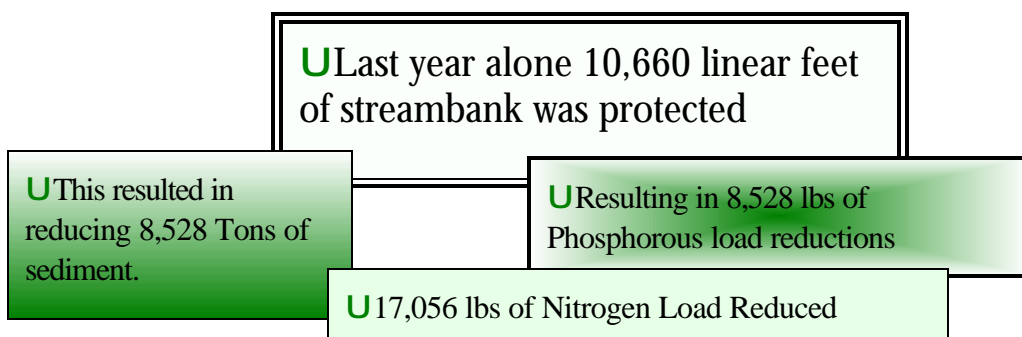
**Y**Stream/Shoreline Protection (580) is defined as treatment used to stabilize and protect banks of streams or constructed channels, and shorelines of lakes, reservoirs, or estuaries.

#### **Protection Purpose**

- = To prevent the loss of land or damage to land uses, or other facilities adjacent to the banks
- = To maintain the flow or storage capacity of the water body or to reduce the offsite or downstream effects of sediment resulting from bank erosion.
- = To improve or enhance the stream corridor for fish and wildlife habitat, aesthetics, recreation.



## Achievements



The State Conservation Commission sponsored 35 Stream/Shoreline Protection projects totaling \$122,371.21 in funds.

### **Filter Strips**

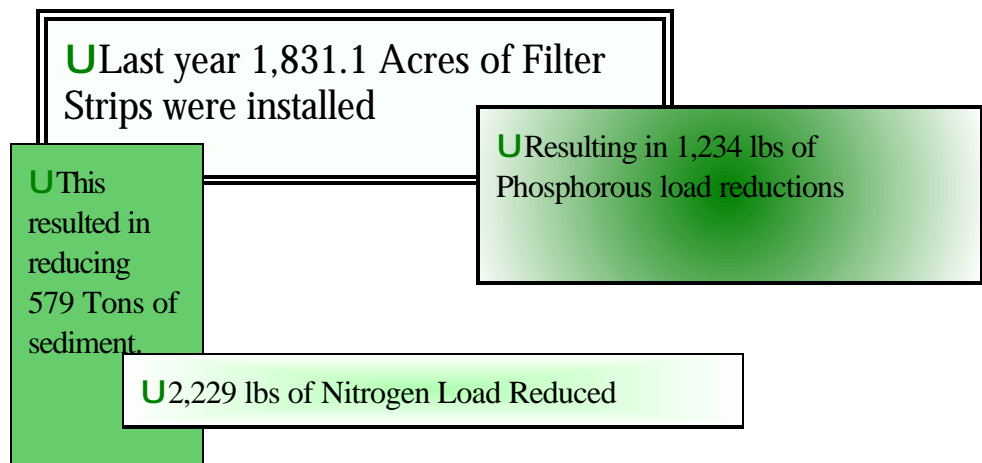
YFilter Strips (393) are defined as a strip or area of herbaceous vegetation situated between cropland, grazing land, or disturbed land (including forest land) and environmentally sensitive areas.

#### **PROTECTION PURPOSE**

- = To reduce sediment, particulate organics, and sediment adsorbed contaminant loadings in runoff
- = To reduce dissolved contaminant loadings in runoff
- = To serve as Zone 3 of a Riparian Forest Buffer, Practice Standard 391
- = To reduce sediment, particulate organics, and sediment adsorbed contaminant loadings in surface irrigation tailwater
- = To restore, create or enhance herbaceous habitat for wildlife and beneficial insects.
- = To maintain or enhance watershed functions and values



## **Achievements**



## **Fencing**

**Y**Fencing (382) is defined as a constructed barrier to livestock, wildlife, or people.

### **PROTECTION PURPOSE**

= This practice may be applied as part of a conservation management system to facilitate the application of conservation practices that treat the soil, water, air, plant animal and human resource concerns.

### **CONDITIONS WHERE THIS PRACTICE APPLIES**

This practice may be applied on any area where livestock and/or wildlife control is needed, or where public access is to be managed.



## **Achievements**

**U**There were 121,461 Linear Feet of Fence installed between KDHE and SCC funded projects.

## **Wastewater Treatment Strip**

**Y**Wastewater Treatment Strips (635) are a treatment component of an agricultural waste management system consisting of a strip or area of herbaceous vegetation.

### **PROTECTION PURPOSE**

The purpose of this practice is to improve water quality by reducing loading of nutrients, organics, pathogens, and other contaminants associated with animal manure and other wastes, and wastewater by treating agricultural wastewater and runoff from livestock holding areas with:

- = Rapid infiltration
- = Overland flow
- = The slow rate process

## **Achievements**

**U**There were 6 acres of Wastewater Treatment Strips Installed Last Year

## Waste Storage Structure

**Y** A Waste Storage Structure (313) is defined as a waste storage impoundment made by constructing embankment and/or excavating a pit or dugout, or by fabricating a structure.

### **PROTECTION PURPOSE**

= To temporarily store wastes such as manure, wastewater, and contaminated runoff as a storage function component of an agricultural waste management system.

## **Achievements**

**U** There were 42 Waste Storage Structures constructed or rennovated last year.



## Water/Sediment Control Basin

**Y** Water/Sediment Control Basins (638) are defined as an earth embankment or a combination ridge and channel generally constructed across the slope and minor watercourses to form a sediment trap and water detention basin.

### **PROTECTION PURPOSE**

A water and sediment control basin may be established to:

- = Improve farmability of sloping land
- = Reduce watercourse and gully erosion
- = Trap sediment
- = Reduce and manage onsite and downstream runoff
- = Improve downstream water quality

## **Achievements**

**U** Last Year 27 Water/Sediment Basins were constructed between SCC & KDHE Projects.





## Wetland Restoration

**Y**Wetland Restoration (657) is defined as rehabilitation of a drained or degraded wetland where the soils, hydrology, vegetative community, and biological habitat are returned to the natural condition to the extent practicable.

### **PROTECTION PURPOSE**

To restore hydric soil conditions, hydrologic conditions, hydrophytic plant communities, and wetland functions that occurred on the disturbed wetland site prior to modification to the extent practicable.

The State Conservation Commission funded 5 Wetland Restoration Projects totaling \$11,620.76 in funds.



## **Achievement**

**U**There were 371 Acres total of restored wetlands. -KDHE Projects

## Ponds

**Y** Ponds (378) are defined as a water impoundment made by constructing an embankment or by excavating a pit or dugout. In this standard, ponds constructed by the first method are referred to as embankment ponds, and those constructed by the second method are referred to as excavated ponds. Ponds constructed by both the excavation and the embankment methods are classified as embankment ponds if the depth of water impounded against the embankment at the auxiliary spillway elevation is 3 feet or more.

### **PURPOSE**

To provide water for livestock, fish and wildlife, recreation, fire control, and other related uses, and to maintain or improve water quality.



## **Achievements**

**U**Constructed **163** Ponds (combined KDHE and SCC funded projects)

## **Critical Area Planting**

**Y** A Critical Area Planting (342) is defined as establishing permanent vegetation on sites that have or are expected to have high erosion rates, and on sites that have physical, chemical, or biological conditions that prevent the establishment of vegetation with normal practices.

### **PROTECTION PURPOSE**

- = Stabilize areas with existing or expected high rates of soil erosion by water.
- = Stabilize areas with existing or expected high rates of soil erosion by wind.
- = Restore degraded sites that cannot be stabilized through normal methods.



## **Achievements**

**U**Planted 238.09 Acres of vegetation in Critical Areas  
(combined KDHE and SCC Project totals)

## **Mulching**

**Y** Mulching (484) is defined as applying plant residues, by-products or other suitable materials produced off site, to the land surface.

### **PROTECTION PURPOSE**

- = Conserve soil moisture
- = Moderate soil temperature
- = Provide erosion control
- = Suppress weed growth
- = Establish vegetative cover
- = Improve soil condition and increase soil fertility



## **Achievements**

**U**Covered 285.20 Acres with  
Mulch  
(Combined KDHE & SCC totals)



### **Riparian Forest Buffer**

**Y**Riparian Forest Buffers (391) are defined as an area of predominantly trees and/or shrubs located adjacent to and up-gradient from watercourses or water bodies.

#### **Protection Purpose**

- = Create shade to lower water temperatures and improve habitat for aquatic organisms.
- = Provide a source of detritus and large woody debris for aquatic and terrestrial organisms.
- = Create wildlife habitat and establish wildlife corridors.
- = Reduce excess amounts of sediment, organic material, nutrients, and pesticides in surface runoff and reduce excess nutrients and other chemicals in shallow ground water flow.
- = Provide a harvestable crop of timber, fiber, forage, fruit, or other crops consistent with other intended purposes.
- = Provide protection against scour erosion within the floodplain.
- = Restore natural riparian plant communities.
- = Moderate winter temperatures to reduce freezing of aquatic over-wintering habitats.
- = To increase carbon storage.



## **Achievements**

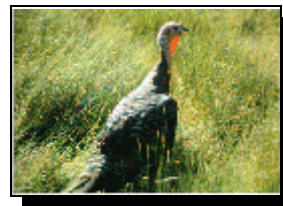
KDHE restored 754 acres of riparian area.

### **Conservation Cover**

**Y**Conservation Cover (327) is defined as establishing and maintaining permanent vegetative cover to protect soil and water resources.

#### **Protection Purpose**

- = Reduce soil erosion and sedimentation.
- = Improve water quality.
- = Enhance wildlife habitat.



## **Achievements**

KDHE Projects totaled 137 acres of retired farmland for conservation.

### **Well Decommissioning**

**Y**Well Decommissioning (351) is defined as the sealing and permanent closure of a water well no longer in use.

#### **Protection Purpose**

- = Prevent entry of vermin, debris, or other foreign substances into the well or well bore hole;
- = Eliminate the physical hazard of an open hole to people, animals, and farm machinery;
- = Prevent entry of contaminated surface water into well and migration of contaminants into unsaturated (vadose) zone or saturated zone
- = Prevent the commingling of chemically or physically different ground waters between separate water bearing zones.



### **Achievements**

KDHE Sponsored 14 well pluggings this last fiscal year.

### **Watering Facility**

**Y**Watering Facility (614) is defined as a device (tank, trough, or other watertight container) used for providing animal access to water.

#### **Protection Purpose:**

To provide watering facilities for livestock and/or wildlife at selected locations in order to:

- = protect and enhance vegetative cover through proper distribution of grazing;
- = provide erosion control through better grassland management; or
- = protect streams, ponds and water supplies from contamination by providing alternative access to water.

### **Achievements**

KDHE and SCC sponsored 184 projects that involved alternative watering supply installation for livestock.

## Cover Crop

**Y**Cover Crop (340) is defined as grasses, legumes, forbs, or other herbaceous plants established for seasonal cover and conservation purposes.

### **Protection Purpose:**

- = Reduce erosion from wind and water
- = Increase soil organic matter
- = Manage excess nutrients in the soil profile
- = Promote biological nitrogen fixation
- = Increase bio-diversity
- = Weed suppression
- = Provide supplemental forage
- = Soil moisture management



## **Achievements**

KDHE and SCC projects combined totaled 3,414.09 acres of cover crop planting. It is estimated that by covering these acres with cover crops rather than leaving the soil bare reduces sediment erosion by approximately 6,141 tons per year, reduces phosphorous load by 7,559 lbs per year, and reduces nitrogen loading approximately 15,108 lbs per year.

## Terraces

**Y**Terraces (600) are defined as an earth embankment, or a combination ridge and channel, constructed across the field slope.

### **Protection Purpose:**

This practice may accomplish one or both of the following:

- = Reduce soil erosion
- = Retain runoff for moisture conservation



Combined KDHE and SCC Terrace projects totaled 1,777,673.80 feet of terraces installed.

## **Achievements**

## Pasture and Hay Planting

**Y**Pasture and Hay Planting (512) is defined as establishing native or introduced forage species.

### **Protection Purpose:**

This practice may be applied as part of a conservation management system to accomplish one or more of the following purposes.

- = Reduce soil erosion by wind and/or water.
- = Improve or maintain livestock nutrition and/or health.
- = Extend the length of the grazing season.
- = Provide emergency forage production.
- = Establish adapted and compatible species, varieties, or cultivars.



## **Achievements**

KDHE and SCC combined projects totaled 4,050.71 acres of forage species plantings.

## Nutrient Management

**Y**Nutrient Management (590) is defined as establishing native or introduced forage species.

### **Protection Purpose:**

Managing the amount, source, placement, form, and timing of the application of nutrients and soil amendments.

- = Reduce soil erosion by wind and/or water.
- = To properly utilize manure or organic by-products as a plant nutrient source.
- = To minimize agricultural nonpoint source pollution of surface and ground water resources.
- = Provide emergency forage production.
- = Establish adapted and compatible species, varieties, or cultivars
- = To maintain or improve the physical, chemical and biological condition of soil.



## **Achievements**

KDHE and SCC supported projects that implemented a nutrient management program on over 4,050 acres.



## Onsite Wastewater Treatment System Projects

**Y** Onsite wastewater treatment system (OWWTS) projects are defined as projects that assess the condition of a current system, construct a new OWWTS in a needed area, repair a failing system or upgrade an under-sized system.

### **Protection Purpose:**

- = Reduce the amount of untreated waste entering a surface water body or groundwater table.
- = Insure proper treatment of waste.
- = Educate landowners that these systems need annual maintenance.
- = Provide information on the systems waste handling capabilities.
- = Reduce loading of nitrogen, phosphorous, pathogens, total suspended solids and organics to the environment.

## **Achievements**

KDHE sponsored 74 projects that addressed Onsite Wastewater Treatment System issues.

## Water Quality Protection Plan

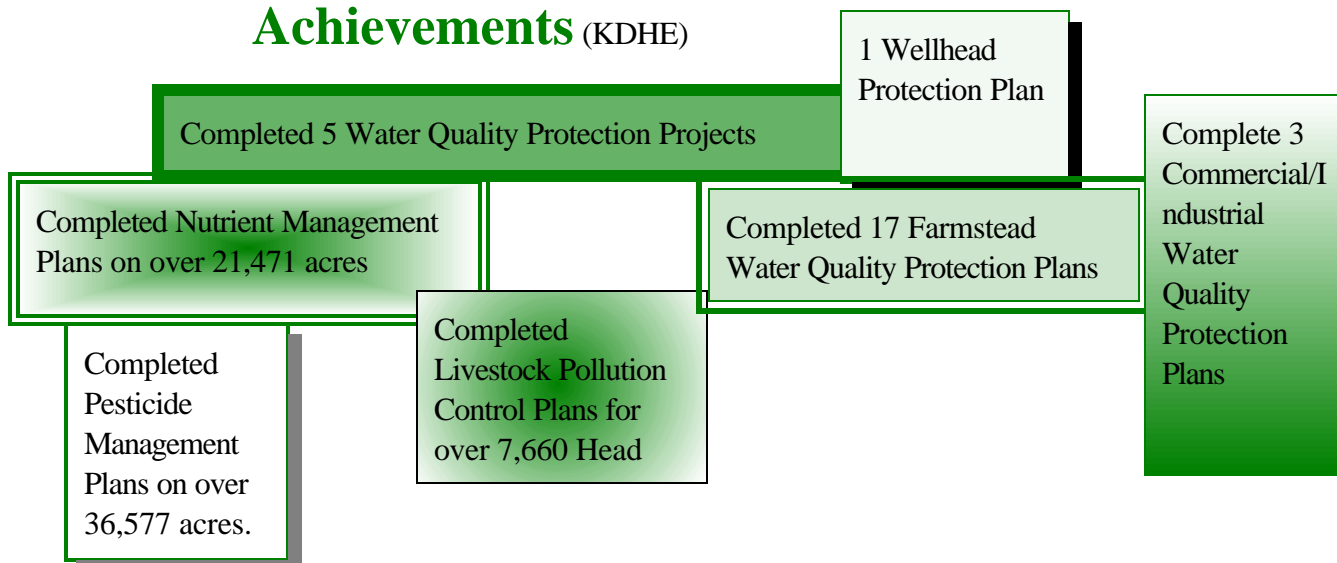
**Y** A Water Quality Protection Plan documents activities required to protect water quality associated with any given water body, land use, or activity.

### **Protection Purpose:**

A Water Quality Protection Plan includes Livestock Pollution Control Plans, Wellhead Protection Plans, and Commercial/Industrial, Farmstead Water Quality Protection Plans, and Nutrient and Pesticide Management Plans.

- = Provide documentation of all activities that will lead to water quality protection.
- = Ensure proper project methods and direction to adequately achieve water quality protection.

## **Achievements** (KDHE)



## **Water Quality Protection Plans: 401 Certifications**

### **Y Kansas Water Quality Certifications Program:**

Section 401 of the Clean Water Act and Pursuant to KSA 82a-326(a)(4) and (b) of the Environmental Coordination Act (KS Department of Agriculture, Division of Water Resources) under the provisions of K.A.R. 28-16-28f(c) (Kansas Surface Water Quality Standards).

KDHE BOW Watershed Management Section certifies that project activities permitted or funded by other state, and federal agencies do not violate Kansas Surface Water Quality Standards.

### **Purpose:**

This type of event may be, but is not limited to, water quality tours, workshops, educational presentations, or conferences.

- = Inform all permit or loan recipients of the need to develop, implement and maintain a water quality protection plan (WQPP). The 401 water quality certification conditions become enforceable conditions of the U.S. Army Corps of Engineers CWA Section 404 permit.
- = The WQPP documents the specific activities, pollutants associated with those activities and water quality protection measures or best management practices, and the parties responsible for implementation to minimize or abate them. It is to be posted on site through the duration of the project.
- = The most common pollutants or potential for pollution includes but is not limited to: sediment/silt, low dissolved oxygen, mechanical fluids, organic loading, pH and nutrients.
- = The referenced water quality protection plan can consist of one of the following:
  - Stormwater Pollution Prevention Plan
  - KDHE generated template
  - Their standard protocol company developed plan

## **Achievement**

Six hundred - sixty (660) applicants for the referenced federal and state program permits and/or funding, have been informed and are expected to develop, implement and maintain water quality protection plans.

## Information & Education Projects

Water Festivals, Information & Education Events, Information & Education Publications, Storm Drain Stenciling Projects, and Household Hazardous Waste Collections

One key component of a successful Non-point source program is education and information. Awareness of water quality and natural resource issues and concerns is essential if we are to change attitudes and behavior. When we provide educational and informational materials to students and adults of these topics, the individual becomes empowered to make the decision to change their behavior, actions or activities to help protect our natural resources.

### Information & Education Event

**Y** An Information & Education Event is defined as a scheduled meeting or assembly designed to inform the audience about non-point source water quality issues.

#### **Purpose:**

This type of event may be, but is not limited to, water quality tours, workshops, educational presentations, or conferences.

- = Provide information to the audience on the designated topic.
- = Answer questions
- = Inform the audience of additional resources



## Achievements

The Watershed Management Section has sponsored several projects hosting or attending Information & Education Events. It is estimated that participating projects informed over 17,634 individuals on various non-point source pollution related topics.



## **Information & Education Publication**

**Y** Information & Education Publications are defined as products produced by a given organization/agency with the intention of educating the reader about non-point source pollution issues.

### **Purpose**

These publications may include informational brochures, pamphlets, reports, children stories, coloring books, newsletters, news articles and press releases.

- = Provide information to the audience on the designated topic.
- = Serve as a reference tool on non-point source information.

## **Achievements**

Supported projects produced 34 Information & Education Publications reaching over 85,071 citizens statewide.

## **Water Festival**

**Y** A Water Festival is defined as an educational activity that is packaged in a fun atmosphere.

### **Purpose**

The idea behind a water festival is to educate students about our natural resources and the need to protect them.

- = Provides students the opportunity to learn and gain hands on experience
- = Encourages participation in activities such as classroom sessions, hands on exhibits, skits, water quiz bowl, or other activities dealing with our natural resources.



## **Achievements**

Watershed Management Section supported projects either hosting or participating in over

## **Storm Drain Stenciling**

**Y** A Storm Drain Stenciling project is defined as a coordinated event where city storm water drains are marked with a warning label to discourage waste dumping.

### **Purpose**

To inform and educate the public that storm drains are connected directly to surface waters within their community and to prevent them from putting anything down the outlets.



- = Provides students an opportunity to educate their community
- = Prevents storm drain dumping
- = Warns the public that these drains are directly connected to surrounding waters.

## **Achievements**

Projects sponsoring Storm Drain Stenciling  
Events marked over 850 storm drains in  
communities throughout the state.

## **Household Hazardous Waste Collection**

**Y** A household hazardous waste collection event invites citizens within a given community to donate household hazardous wastes to insure proper disposal.

### **Purpose**

To inform and educate the public that many household items are hazardous and should not be taken to a local landfill.

- = Allows volunteers to educate their community on the environmental hazards of household hazardous wastes.
- = Prevents pounds of various household hazardous wastes to enter landfills.
- = Educates communities on what popular items within households are hazardous wastes.

## **Achievements**

The Watershed Management Section sponsored 2 projects that hosted Household Hazardous Waste events within their communities. These events recycled over 3,250 batteries donated by citizens within the community.



# Attachments



Annual Report  
2001-2002

## Current 319 Projects & Project Sponsors

Project Title	Project Sponsor
Reducing Atrazine Runoff (Blue & Delaware), Part 3	KSU
Sand Springs Aquifer-NPS Pollution Control	City of Abilene/Dickinson County Water Improvement
Kanopolis Watershed Assessment	KSU
Investigating the Use of Urban Storm water Runoff BMP's on Recreational Areas-Part 3	Wichita State University
Kansas Urban Water Quality Restoration and Protection Initiative (Planning Process Tech. Assistance, Education & Out Reach)	KSU
Env. Assessment & Critical Areas Identification & TA - Year 1	Kansas Biological Survey
Water Quality Profit Optimization, Part 3	KSU
Quality & Quantity of Suspended Material in Kansas Rivers: Demonstrating the Influence of Management Practices, Part 2	KSU
Environmental and Economic Analysis of Switch grass Production for Water Quality Improvement in Northeast Kansas- Part 2	KSU
Development of NPS Loan Fund Agreement	KSU
Abatement of Fecal Coliform Bacteria, Part 1	KSU
Waste Management Water Quality Protection Learning Center	KSU
TMDL On-site Wastewater Education	North East Kansas Environmental Services
Cheney Lake Water Quality Protection - Part 5	Reno County Conservation District
Local Environmental Protection Study Committee Research Support	Wichita State University
Suburban Site Planning for Quality Storm water Management	KSU
Demonstration of Multi-County Water Quality Planning & Implementation Ph 3	North East Kansas Environmental Services
Sand Springs Aquifer-NPS Pollution Control	City of Abilene/Dickinson County Water Improvement
Kansas Environmental Leadership Program (KELP), Class 1 & 2	KSU
Sand Springs Aquifer-NPS Pollution Control	City of Abilene/Dickinson County Water Improvement
Water Quality Profit Optimization, Part 2	KSU
Environmental and Economic Analysis of Switch grass Production for Water Quality Improvement in Northeast Kansas - Part 1	KSU

Kansas Urban Water Quality Restoration and Protection Initiative (Planning Process Tech. Assistance, Education & Out Reach) Part 2	KSU
Manure Utilization Workshop for Beef and Dairy Cattle	Kansas Dairy Association
Kansas Environmental Leadership Program (KELP), Class 3	KSU
Waste Management Water Quality Protection Learning Center, Part 2	Sunflower Land Trust
Investigation of Contamination Threats to Ottawa County Rural Water District No. 2	Ottawa County Rural Water District No 2
Participatory Farms Water Quality Monitoring to Achieve TMDL Goals	KSU
Incorporation of Watershed Water Quality Considerations into Local Government Land Use Planning	Leavenworth County Board of County Commissioners
Melvern Water Quality Protection Project-Part 1	Flint Hills RC&D
Metropolitan Kansas City Water Quality Initiative-Part 1	Mid-America Regional Council
Performance Evaluation of Wetlands in Northeast Kansas	KSU
Hillsdale Water Quality Project	Lake Region RC&D
Addressing Water Quality Concerns on Clay County Farmsteads	Clay County Conservation District
Marais Des Cygnes River Basin Watershed Restoration and Protection Strategy	Lake Region RC &D
Marshall County Farmstead Pollution Project	Marshall County Conservation District
Developing a WRAPS for the Upper Wakarusa Watershed	Kaw Valley Heritage Alliance
Lake Olathe Watershed Protection Project	City of Olathe
Republican River Streambank Stabilization Project: Ely Site	Jewell County Conservation District
City of Lawrence Wetland Project	Douglas County Conservation District
Republican River Streambank Stabilization Project: Rathbun Site	Jewell County Conservation District
Water Quality Improvements of Vegetated Riparian Areas and Buffers - Part 1	KSU
Williams Background Facility Project	Lyon County Conservation District
Ecological Livestock Pollution Control Project - Part 2	KSU
Geffert Streambank Stabilization - Part 2	Allen County Conservation District
Watershed Dairy Environmental Cooperative - Part 1	KSU

Restoration of Land Damaged by Oil and Gas Production	Flint Hills RC&D
Watershed Dairy Environmental Cooperative - Part 2	KSU
Graham County Farmstead Water Quality Project	Graham County Conservation District
Leavenworth County Conservation District Stream Trailer	Leavenworth County Conservation District
Frith Streambank Stabilization Project	Washington County Conservation District
Ecological Livestock Pollution Control Project - Part 3	KSU
Fredrickson Alternative Livestock Water Supply Project	Osage County Conservation District
Haverkamp Brothers Streambank Stabilization Project	Nemaha County Conservation District
Gary Pickert Fencing Project	Anderson County Conservation District
Little Blue River Streambank Stabilization and Riparian Restoration Project	State Conservation Commission
Nutrient and TSS Reduction in Surface Waters in North Central Kansas	Clay County Conservation District
Ecological Livestock Pollution Control Project - Part 1	KSU
Pond and Riparian Area Water Monitoring Project	Butler County Conservation District
Local Wetland and Riparian Areas Alliances - Part 2	Pheasants Forever
Washington County Water Quality Improvement - Part 2	Washington County Conservation District
Local Wetland and Riparian Areas Alliances - Part 3	Pheasants Forever
Water Quality Improvements of Vegetated Riparian Areas and Buffers - Part 2	KSU
Nonpoint Source Education for Fourth Level - School Year 00-01	Topeka USD 501 Public Schools
Phillips County Water Quality Information and Education Program	Phillips County Conservation District
Earth Awareness Research for Tomorrow's Habitat(E.A.R.T.H.)	Extension Education Foundation, Inc.
KSWiM Network/Streamlink Watershed Education	Kaw Valley Heritage Alliance
Rooks County Water Quality Awareness Program	Rooks County Conservation District

Community Waters Project	Wilson County Conservation District
Kansas Student Water Monitoring(KSWiM)/StreamLink Watershed Education	Kaw Valley Heritage Alliance
Sheridan County Farmstead Water Quality Initiative Project	Sheridan County Conservation District
Jewell County CWN Education Work	Jewell County Conservation District
2001 Topeka Water Festival	Kansas Association for Conservation and Environmental Education (KACEE)
Nonpoint Source Education for Fourth Level "Wild World of Waste & Water"- School Year 01-02	Topeka USD 501 Public Schools
Kanopolis Lake-Smokey Hill River Watershed Water Quality Protection Information and Education Project - Part II	Post Rock Rural Water Dist
Preventing Pollution in Our Storm water Drains	City of Lawrence
Thomas County Water Quality Awareness Project	Thomas County Conservation District
Phillips County Clean Water Celebration	Phillips County Conservation District
Candy Catfish From Kansas	Royal Valley Elementary
Kanopolis Watershed Water Quality Project - Part I	Post Rock Rural Water Dist
McPherson County Children's Water Festival	McPherson County Extension
Earth Awareness Research for Tomorrow's Habitat (E.A.R.T.H.)--Part 2	KSU
2002 Topeka Water Festival	Kansas Association for Conservation and Environmental Education (KACEE)
Restoration of Gypsum Creek- Phase 1	City of Wichita
Water Quality Protection Model Demonstration Project for Public Educational Entities	Fort Scott Community College
Clean Water Farms Whole Farm Planning:yr1	Kansas Rural Center
Demonstration of BMP's to Avoid Groundwater Pollution from Application of Livestock Manure to Cropland, Part 2	KSU
Jackson County Water Quality Protection: Alternate Livestock Water Supply & Protection-Pt1	Jackson County Conservation District
Jefferson Co./Perry Lake Water Quality Protection Project	Jefferson County Conservation District



Subsurface Drip Irrigation to Protect Shallow Groundwater Quality- Part 1	KSU
No-Till Farming to Protect Ground and Surface Water- Part 1	KSU
Great Plains Foundation Water Quality Restoration & Protection Plan Initiative Part 1	Great Plains Foundation
Great Plains Foundation Water Quality Restoration & Protection Plan Initiative, Part 2	Great Plains Foundation
Jackson County Water Quality Protection: Alternate Livestock Water Supply & Protection - Part 2	Jackson County Conservation District
Clean Water Farms Whole Farm Planning:yr2	Kansas Rural Center
Agricultural Industry Water Quality Awareness Project	KFRM Radio
On-Site Aerobically Treated Wastewater Demo.	Johnson County Conservation District
Grazing Land Water Quality, Part 2	KSU
Upper Sedgwick County Land Treatment - Phase II	Sedgwick County Conservation District
Grazing Land Water Quality, Part 5	KSU
Water Quality Initiative/Grassroots Approach CWN Project	Barton County Conservation District
Golf Course Water Quality Protection Demonstration Site Selection	Wichita State University
Riparian Stabilization & Pasture Enhancement Program	Sunflower Land Trust

## **Program Partner Acknowledgments:**

The Watershed Management Section would like to thank the following program partners for their support and cooperation:

**W** The State Conservation Commission: Specifically Don Jones

**W** Kansas State University Research & Extension Offices: Specifically Dan Devlin & Bill Hargrove

**W** The Kansas Water Office: Specifically Margaret Fast

**W** The Environmental Protection Agency: Specifically Don Hemera & Pete Davis

**W** The Department of Agriculture: Specifically Dale Langley

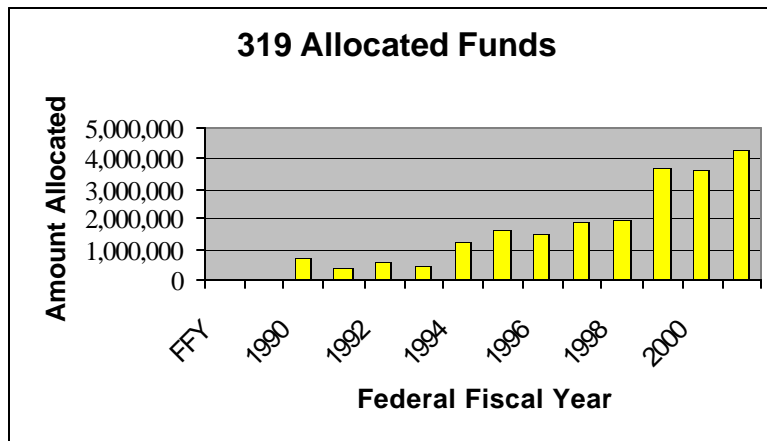
**W** The Natural Resource Conservation Service: Specifically Lyle Frees

## 319 Budget Tracking

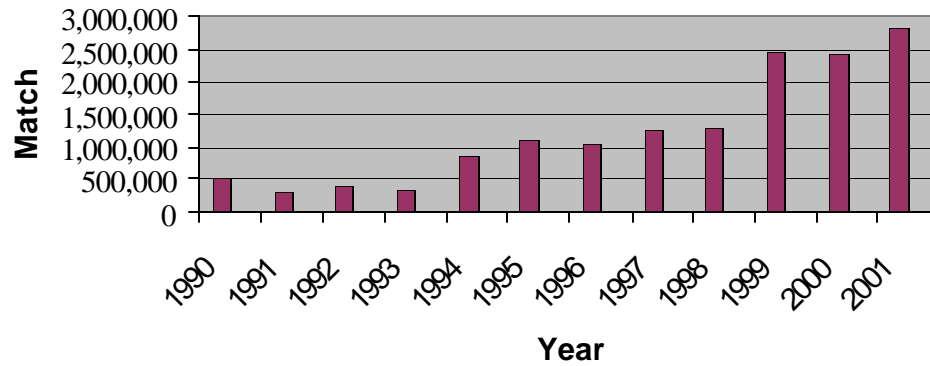
Information provided by the Grant Reporting and Tracking System

FFY	GRTS Budget	Match	Other Sources
1990	745,091	496,727	225,000
1991	407,642	271,761	141,666
1992	575,094	383,396	480,061
1993	485,436	323,624	362,219
1994	1,278,398	852,265	300,343
1995	1,659,323	1,106,215	469,820
1996	1,559,264	1,039,509	610,738
1997	1,874,618	1,249,745	620,000
1998	1,931,200	1,287,467	282,000
1999	3,688,400	2,458,933	284,656
2000	3,654,400	2,436,267	284,000
2001	4,283,000	2,855,333	255,383

Program Totals: 1990 - 2001  
 319 Allocation: \$22,141,866.00  
 Match Funds: \$14,761,244.00  
 Other Funding: \$4,315,886.00



### 319 Project Match Funds



### Other Funding Sources

